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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,483	06/21/2000	TOSHIKAZU KOBAYASHI	AD-6547-A	3461

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LEGAL PATENT RECORDS CENTER  
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WILMINGTON, DE 19805

EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 06/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/582,483

Applicant(s)

KOBAYASHI, TOSHIKAZU

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 June 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. All outstanding rejections are overcome by applicants' amendment filed 6/6/02.

In light of the new grounds of rejection as set forth below, the finality of the previous office action has been withdrawn and thus, the following rejection is non-final.

**Claim Rejections - 35 USC § 112**

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-8 and 10-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 recites "ion-conductive polyether-based polymer". The scope of the claim is confusing because it is not clear what is meant by "polyether-based". Is the polymer a polyether, a copolymer comprising polyether, mixture of polyether and other polymer? Clarification is requested.

Similarly, claim 8 recites "polyether-system ion-conducting polymer". The scope of the claim is confusing because it is not clear what is meant by "polyether-system". What comprises the system? Does the system contain more than just polyether? Clarification is requested.

**Claim Rejections - 35 USC § 103**

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-5, 7, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (U.S. 5,886,098) in view of Mukohyama et al. (U.S. 5,700,857).

Ueda et al. disclose an antistatic composition 3-40% polyetherester amide, 60-90% polymer such as polyamide, polycarbonate, polyacetal, and polyester, 0.2-20% ion source such as alkali metal or alkaline earth metal salt of sulfonic acid, and plasticizer wherein the composition has surface resistivity on the order of  $10^{10}$  -  $10^{11}$  (col.1, lines 14-15, col.2, lines 25 and 35-42, col.5, lines 7-19, col.6, lines 59-67, col.7, lines 38-53, col.8, lines 1-8 and 22-34, col.11, lines 22-32, col.12, line 19, col.15, lines 45-55, and Tables 7 and 10).

The difference between Ueda et al. and the present claimed invention is the requirement in the claims of (a) specific type and amount of plasticizer and (b) specific ion source.

With respect to difference (a), Ueda et al. disclose the use of plasticizer, however, there is no explicit disclosure that the plasticizer is for ion-conductive polyether polymer as presently claimed.

Mukohyama, which is drawn to resin composition, disclose the use of 0.1-10% plasticizer identical to that presently claimed, such as polyethylene glycol di-2-ethyl hexoate, in order to maintain the mechanical characteristics of the composition and control crystallization rate and molding temperature of the composition (col.3, lines 17-50). Attention is drawn to col.2, lines 19-23 of Mukohyama which discloses that the composition contains polyester containing

polyether, i.e. polyalkylene oxide, segments. It would have been obvious to one of ordinary skill in the art that such segment is intrinsically ion-conductive. Thus, it is clear that the plasticizer of Mukohyama is used in conjunction with polymers containing ion-conductive polyether segments as required in the present claims.

In light of the motivation for using specific type and amount of plasticizer disclosed by Mukohyama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer in the antistatic composition of Ueda et al. in order to produce a composition with good mechanical properties and suitable crystallization rate and molding temperature, and thereby arrive at the claimed invention.

With respect to difference (b), Mukohyama, which is drawn to resin composition disclose the use of ionomer such as sodium salt of ethylene/methacrylic acid copolymer as well as ion source comprising (i) at least one source of carboxyl groups selected from the group consisting hydrocarbon acid containing 7-54 carbon atoms and polymers having at least one attached carboxyl group and (ii) at least one source of metal ions selected from sodium and potassium ion sources that react with the carboxyl groups of (i). The motivation for using such ion sources it as crystallization promoters to increase the crystallization and produce composition with excellent impact strength and high surface gloss (col.2, lines 4-16, col.3, line 65-col.4, line 31, col.5, lines 30-32, and col.7, lines 6-12).

In light of the motivation for using specific ion source disclosed by Mukohyama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such ion source in the antistatic composition of Ueda et al. in order to produce a composition

with excellent impact strength and high surface gloss, and thereby arrive at the claimed invention.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. in view of Mukohyama as applied to claims 1-5, 7, and 11-15 above, and further in view of JP 01163252.

The difference between Ueda et al. in view of Mukohyama and the present claimed invention is the requirement in the claim of specific type of molded article.

Ueda et al. disclose that the antistatic composition is used in molded articles but there is no explicit disclosure that the molded article is a transfer medium-separating guide part for electrophotographic devices.

On the one hand, given the broad disclosure of antistatic molded articles by Ueda et al., it would have been obvious to one of ordinary skill in the art to use such molded article in any device which required antistatic properties including transfer medium-separating guide part for electrophotographic devices, and thereby arrive at the claimed invention.

On the other hand, JP 01163252 disclose that antistatic compositions comprising polymer such as polycarbonate and polyetherester amide are used in copiers and for parts of electric appliances and machines, which clearly encompasses transfer medium-separating guide part for electrophotographic devices.

In light of the disclosure of JP 01163252, it therefore would have been obvious to one of ordinary skill in the art that the antistatic composition of Ueda et al. can in fact function as transfer medium-separating guide part for electrophotographic devices, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

7. Claims 8, 10, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (U.S. 5,886,098) in view of Mukohyama (U.S. 5,700,857).

Ueda et al. disclose an antistatic composition polyetherester amide, polymer such as EPDM, ion source such as alkali metal or alkaline earth metal salt of sulfonic acid, and plasticizer wherein the composition has surface resistivity on the order of  $10^{10}$  -  $10^{11}$  (col.1, lines 14-15, col.2, lines 25 and 35-42, col.5, lines 7-16 and 67, col.6, lines 5-6 and 59-67, col.7, lines 38-53, col.8, lines 1-8 and 22-34, col.11, lines 22-32, col.12, line 19, col.15, lines 45-55, and Tables 7 and 10).

The difference between Ueda et al. and the present claimed invention is the requirement in the claims of specific type and amount of plasticizer.

Ueda et al. disclose the use of plasticizer, however, there is no explicit disclosure that the plasticizer is for ion-conductive polyether polymer as presently claimed.

Mukohyama, which is drawn to resin composition, disclose the use of 0.1-10% plasticizer identical to that presently claimed, such as polyethylene glycol di-2-ethyl hexoate, in order to maintain the mechanical characteristics of the composition and control crystallization rate and molding temperature of the composition (col.3, lines 17-50). Attention is drawn to col.2, lines 19-23 of Mukohyama which discloses that the composition contains polyester containing polyether, i.e. polyalkylene oxide, segments. It would have been obvious to one of ordinary skill in the art that such segment is intrinsically ion-conductive. Thus, it is clear that the plasticizer of Mukohyama is used in conjunction with polymers containing ion-conductive polyether segments as required in the present claims.

In light of the motivation for using specific type and amount of plasticizer disclosed by Mukohyama as described above, it therefore would have been obvious to one of ordinary skill in the art to use such plasticizer in the antistatic composition of Ueda et al. in order to produce a composition with good mechanical properties and suitable crystallization rate and molding temperature, and thereby arrive at the claimed invention.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. in view of Mukohyama as applied to claims 8, 10, and 16-19 above, and further in view of JP 01163252.

The difference between Ueda et al. in view of Mukohyama and the present claimed invention is the requirement in the claim of specific type of molded article.

Ueda et al. disclose that the antistatic composition is used in molded articles but there is no explicit disclosure that the molded article is a transfer medium-separating guide part for electrophotographic devices.

On the one hand, given the broad disclosure of antistatic molded articles by Ueda et al., it would have been obvious to one of ordinary skill in the art to use such molded article in any device which required antistatic properties including transfer medium-separating guide part for electrophotographic devices, and thereby arrive at the claimed invention.

On the other hand, JP 01163252 disclose that antistatic compositions comprising polyether esteramide are used in copiers and for parts of electric appliances and machines, which clearly encompasses transfer medium-separating guide part for electrophotographic devices.



In light of the disclosure of JP 01163252, it therefore would have been obvious to one of ordinary skill in the art that the antistatic composition of Ueda et al. can in fact function as transfer medium-separating guide part for electrophotographic devices, and thus, one of ordinary skill in the art would have arrived at the claimed invention.

### **Response to Arguments**

9. In the amendment filed 6/6/02, applicants argue that:

(a) Ueda et al. lists plasticizer in laundry list of optional ingredients from which there is no motivation to pick and choose the plasticizer.

(b) No motivation to combine Ueda et al. with Mukohyama.

(c) Comparative data in Table 1 of the present specification establishes unexpected or surprising results over the cited prior art.

With respect to argument (a), while plasticizer is listed among a group of additives, given that the plasticizer is an additive which is known to be conventionally used in such composition as disclosed by Ueda et al. such additive would naturally appear in a list with other known additives. The fact remains that Ueda et al. do disclose the use of plasticizer as presently claimed. In light of this, and given that plasticizers are such well known additives, it is the examiner's position that it would have been within the skill level of one of ordinary skill in the art to use plasticizer in the composition of Ueda et al.

It is noted that there is no explicit disclosure that the plasticizer is for ion-conductive polyether polymer as presently claimed. However, this is why Ueda et al. is now used in combination with Mukohyama which discloses plasticizer identical to that presently claimed.

With respect to argument (b), applicants argue that there is no motivation to combine Ueda et al. with Mukohyama given that Mukohyama discloses plasticizer for polyester, not ion-conductive polyether polymer and Mukohyama is not drawn to antistatic composition.

However, attention is drawn to col.2, lines 19-23 of Mukohyama which discloses that the composition contains polyester containing polyether, i.e. polyalkylene oxide, segments. It would have been obvious to one of ordinary skill in the art that such segment is intrinsically ion-conductive. It is noted that page 10, line 18 of the present specification discloses that polyethylene oxide is in fact one of the polyethers suitable for use in the present invention. Thus, it is clear that the plasticizer of Mukohyama is used in conjunction with polymers containing ion-conductive polyether segments as required in the present claims.

Applicants also argue that Mukohyama is not a relevant reference because it is not drawn to antistatic composition and does not disclose that the plasticizer will lower surface resistivity.

However, it is noted that Mukohyama discloses a resin composition that is used in producing parts for the electrical/electronic field. It is well known that antistatic coatings are used to prevent build up of electric charges that can damage electrical equipment. Thus, the disclosure of Mukohyama is relevant to the field of antistatic compositions.

Further, it is noted that it is not required that Mukohyama disclose antistatic composition or that the plasticizer will lower surface resistivity in order to make the combination of Ueda et

al. with Mukohyama proper. Ueda et al. disclose composition comprising polyether polymer and plasticizer but do not disclose specific type of plasticizer as presently claimed. Mukohyama teaches the use of plasticizer identical to that presently claimed wherein the plasticizer is used in conjunction with polymers containing ion-conductive polyether segments and further disclose that the plasticizer is necessary to realize the crystallization rate and molding temperature needed for realizing the synergistic effect with such polyether segment (col.3, lines 40-46). In light of the motivation for using specific type of plasticizer disclosed by Mukohyama, it is the examiner's position that the combination of Ueda et al. with Mukohyama is proper. Further, given that the plasticizer disclosed by Mukohyama is identical to that presently claimed, it is clear that such plasticizer would intrinsically produce composition with lower surface resistivity.

Applicants further argue that the motivation for using plasticizer disclosed by Mukohyama, i.e. maintain the mechanical characteristics of the composition, control crystallization rate and molding temperature of the composition, etc., is not relevant to Ueda et al. which already discloses a composition with good mechanical properties with no disclosure of any problems with crystallization rate. However, given that Ueda et al. disclose the use of polyether polymer and plasticizer, and that Mukohyama disclose plasticizer used in conjunction with polymer containing polyether segments which is used to overcome problems caused by such polymer containing polyether segments, it is the examiner's position that there is good motivation to combine Ueda et al. with Mukohyama.

With respect to argument (c), applicant points to Table 1 of the specification, specifically inventive example 1, wherein the composition comprises plasticizer, and comparative example CE 5, wherein the composition does not comprise plasticizer, and argues that in light of the fact that the inventive composition shows better antistatic properties, i.e. lower surface resistivity and volume resistivity, than the composition without plasticizer, the data establishes unexpected or surprising results over the cited prior art.

However, given that the combination of Ueda et al. with Mukohyama already discloses the use of composition containing plasticizer identical to that presently claimed and given that Mukohyama disclose that such plasticizer is used in conjunction with polymer containing ion-conductive polyether segment as required in the present claims, it is the examiner's position that the data pointed to by the applicant does not establish unexpected or surprising results over Ueda et al. in view of Mukohyama.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*CS*

Callie Shosho

6/20/02

*Vasu Jagannathan*  
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